

CLAIMS

1 – 15 (canceled)

16. (previously presented) A method for the nondestructive testing of a component comprising a base body further comprising a base material, the method to determine a degraded region of the base material, comprising:

subjecting the component to a first eddy-current producing signal of a first frequency;
determining a property of the base material responsive to the first signal having a depth of penetration including the base material;

subjecting the component to a second eddy-current producing signal of a second frequency, the first frequency lower than the second frequency; and

determining a property of the degraded region responsive to the second signal having a depth of penetration including the degraded region, wherein the property of the degraded region comprises conductivity or permeability, wherein the base body and the degraded region do not contain ferromagnetic material.

17. (previously presented) The method as claimed in claim 16, wherein the first signal comprises a low frequency signal and the second signal comprises a high frequency, and wherein the component is initially subjected to the first signal followed by the second signal.

18. (previously presented) The method as claimed in claim 16, further comprising subjecting the component to additional frequency signals continuously from the first frequency to the second frequency in a frequency scan.

19. (previously presented) The method as claimed in claim 16, wherein oxide regions composed of oxidized carbides that are near a surface of the base body represent the degraded regions.

20. (previously presented) The method as claimed in claim 16, wherein the base body comprises a carbide-containing alloy.

21. (previously presented) The method as claimed in claim 16, wherein sulfided regions of the base body located close to a surface of the base material represent the degraded regions.

22. (previously presented) The method as claimed in claim 16, wherein a measurement probe with coils in meandering form is used to generate the first and the second signals.

23. (previously presented) The method as claimed in claim 16, wherein a relative magnetic permeability of the base body is less than or equal to 1.2.

24. (previously presented) The method as claimed in claim 16, characterized in that the frequency of each of the first and the second signals is in the range from 500 kHz to 35 MHz.

25. (previously presented) The method as claimed in claim 16, wherein the measurement probe for the eddy current measurement is located on a surface of the base body.

26. (previously presented) The method as claimed in claim 16, wherein the base material is made from a nickel- or cobalt-base superalloy.

27. (previously presented) The method as claimed in claim 16, wherein the degraded regions have a low electrical conductivity.

28. (previously presented) The method as claimed in claim 16, wherein a measurement variable of the base material is measured responsive to the first signal and a measurement variable of the degraded region is measured responsive to the second signal.

29. (previously presented) The method as claimed in claim 28, wherein the measurement variable changes during the eddy current measurement as a function of the frequency.

30. (canceled)

31. (previously presented) The method as claimed in claim 16, wherein the component is a blade or vane.

32. (previously presented) The method of claim 16 further comprising determining a depth of the degraded region according to a difference between the property of the base material and the property of the degraded region.